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Color detection using non-target reflectivity plastic optical fiber displacement sensor

(Article in press ?)

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Abstract

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A simple plastic optical fiber displacement sensor has been demonstrated as a non-contact color detection device. The sensitivity of the sensor is 0.0228, 0.1718, 0.1122, 0.106, and 0.1267 mW/mm for black, blue, green, red, and white, respectively. The experimental results prove that as the color changes from dark to bright, the peak output power increases proportionally. The proposed sensor is highly stable and persistent, with additional advantages of practicality of design, high efficiency, comprehensive depth of field, and low cost of production, which could be beneficial for applications in the sensing field. © 2020 Wiley Periodicals, Inc.

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